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## NECROLOGY

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### RICHARD LEACH MADDOX

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On Sunday, May 11, 1902, there passed away at Portswood, Southampton, England, Dr. Richard Leach Maddox, the pioneer of photomicrography, and an honorary member of our Society, and by his demise the scientific world is the poorer, losing as it does a steady hard worker and accurate observer, as well as a most genial and charming personality.

Richard Maddox was born at Bath in August, 1816. Of his early days, very few details are on record, beyond the fact that he was educated at a public school in Somersetshire. Then, having decided on entering the profession of medicine, he became a student at University College, London, in 1837. Always delicate, he had, even while a student, to suspend his work on account of the condition of his health, and in 1839 he left England for a voyage around the world. On his return in 1840 he resumed his studies, and obtained the diploma of the Royal College of Surgeons of England two years later. To this he added the license of the Society of Apothecaries in 1843. As might have been expected from a man with such a keen desire for work, and work for its own sake, we find him in 1844 pursuing his studies in Paris, which was then the centre of medical research, attending chiefly the practice of the Hôtel de la Charité and the lectures of the late Dr. Donne. Dr. Maddox also devoted a very large amount of his time to microscopy, and in this connection it may be mentioned that he translated Dr. Dujardin's "Manual" at about the time that Quekett's "Treatise on the Microscope" appeared, but as it was impossible to arrange for the use of the beautiful plates illustrating the work, the translation was never published. In 1847 he appears to have visited Smyrna, proceeding afterwards to Constantinople, where for a time he practised his profession, and where he met Amelia, daughter of Benjamin Winn Ford, Esq., of that city, whom he married in 1849. In 1850 he re-



Yours very truly  
Oliver A. Hoff

turned to England, and the following year took the degree of M.D. of Aberdeen University. In 1852 he again settled in practice in Constantinople, and during the latter part of the Crimean War held the appointment of Civil Surgeon to the hospital at Scutari. His health again causing him some anxiety, Dr. Maddox came back to England, practising for a time at Islington, London, then at Ryde, Isle of Wight, and finally settling at Woolston, near Southampton, in 1859, where he remained for fourteen years. In 1874 he left Woolston to become resident physician to the late Duke of Montrose, from whom he went to Sir William Watkins-Wynn, and then to Lady Katherine Bannerman. His wife having died in 1871, Dr. Maddox married in 1875, Agnes, daughter of George Sharp, Esq., of Newport, Isle of Wight (who survives him), and the same year he again went abroad, first to Ajaccio, and afterwards to Bordighera and Cornigliano, practising his profession amongst the English residents. Returning to England finally in 1879, he lived for some years at Gunnersbury, but from 1886 onwards resided at Greenbank, Portswood, Southampton, England, living in a most retired manner, but keeping up his interest in everything relating to scientific work, and constantly writing for various journals and papers in England, France, and the United States; indeed, within a few days of his death he contributed a letter to the papers, dealing with the controversy anent the discovery of the "Holy Shroud" at Turin. On the 10th of May, 1902, his old-standing complaint, aortic aneurysm, suddenly became worse, and on the following day he breathed his last at the advanced age of eighty-five years. Dr. Maddox was interred in the Southampton cemetery on May 15. A son and a daughter by his first wife, and a son by his second wife, survive him.

From this brief outline of a busy, restless life it is not easy to see where, and when, Dr. Maddox secured the necessary time and opportunity for the more strictly scientific research work which has made his name famous, and it speaks volumes for his powers of adaptability and of steady application that he was able to accomplish so much under such unfavorable circumstances. As early as 1853, he took up the study of photography, and in a contribution to "Photography," February 11, 1892, he refers to this in the following words: "My first lens was bought about 1846, but active professional duties prevented its being used until 1852; from that date

onwards, as an amateur, I have been interested in photography." Then, too, he was undoubtedly the pioneer in the application of photography to microscopical work, just as he was one of the very first to grasp its potentialities for the reproduction of pictures of microscopical preparations. In spite of his early failures in this direction he was sanguine of ultimate success and subsequently referring to the subject he wrote: "Still, I felt and trusted its day would come, and be of much assistance to the busy microscopist." His disheartening efforts in photomicrography only spurred him on to further endeavors, and there is not the least doubt that the substitution of gelatine for collodion in the preparation of photographic plates, resulting in the manufacture of dry plates, is the direct outcome of his early photomicrographic failures. The first public recognition of his work in the portrayal of microscopical objects took the form of a medal from the then "Photographic Society of London" in 1853. This was followed after a long interval by a medal from the Council of the International Exhibition of Dublin (1865) for a series of his photomicrographs, published by the late James Howe. In 1865 a reproduction of some of Dr. Maddox's photographs formed the frontispiece of Lionel Beale's "How to work with the Microscope"—probably the first attempt in England to employ photomicrographs as book-illustrations.

The periodical attacks of ill-health to which he was subject, and which so frequently drove him from England in search of more genial climes, were often due to over-work; at these times, over-work in a vitiated atmosphere, charged with ether vapor from the collodion emulsions of the "wet" photographic plate of that period, made its effects painfully apparent, and, combined with the desire to obtain a less cumbersome and troublesome method of securing his photograms of microscopical objects, caused Dr. Maddox to somewhat restrict the scope of his research work. The result of his experiments became apparent in 1871, when he published in the "British Journal of Photography" an account of the compounding of a practicable gelatino-bromide emulsion, and its employment as a "dry" photographic plate. The Royal Microscopical Society of England immediately recognized the value of his work by electing him an honorary Fellow in 1871. Later on, he became a student of the then infant science of bacteriology, and among other researches upon which he was subsequently engaged, was one upon the micro-organ-

isms present in the air, in which he used a piece of apparatus of his own invention, the "aeroconiscope," practically a multiple funnel set up as a vane. The wind passing through this apparatus deposited its contained organisms upon a thin coverglass prepared for its reception by being coated with a layer of gelatine; the organisms were then cultivated and the results accompanied by many careful figures, published in the current monthly *Microscopical Journal*. He gave up much time also to microscopical drawing, and examples of his skill may be found in the work of the late Dr. Parkes on "Hygiene," and also in Dr. Naylor's "Skin Diseases." Many of his colored drawings, however, of Diatomaceae, when subjected to the action of various reagents, and figures of the various yeasts in beer deposits, have not been published.

General public recognition of the value of Dr. Maddox's work was, as is too often the case in the world of science, delayed till late in life. In 1885 he received the gold medal of the Inventions Exhibition, at which he exhibited the earliest specimens of gelatine-bromide negatives made, in 1871, and after this many honors reached him. The Scott Legacy medal and premium from the Franklin Institute in Philadelphia, U. S. A., was awarded him in 1889, whilst in the autumn of 1891, as it was reported that he had lost heavily through a defaulting trustee, a sum of between £500 and £600 was raised for him in contributions from photographers in England, France, Germany, and America, in recognition of the value of his work. A gold medal from Antwerp, numerous diplomas, and finally the Progress Medal of the Royal Photographic Society of England (1901), were in turn conferred upon him.

Although Dr. Maddox's experiments in emulsifying silver in gelatine do not entitle him, as many erroneously claim, to the credit of having *invented* the gelatine dry-plate, there is not the least doubt that he pointed the way for other workers. This is not the time to go into the acrimonious discussions that have raged around this distinguished worker's name—discussions which were rendered acrimonious by the claims and counter-claims of others, for Dr. Maddox himself seems to have troubled very little about the dispute. Indeed, on his part there was throughout a conspicuous absence of assertiveness of virulence; he was one of that very high type of investigator who works for the love of his subject and for the sake of truth, without any ulterior motive, and certainly with no thought of

pecuniary reward. Perhaps the most pleasant trait of his character was his readiness to help to the fullest of his capabilities everyone who sought his advice on photographic or photomicrographic work, holding as he did, that the claims of science for her advance were, "If freely ye have received, freely give."

J. W. H. E.